International Journal of Science Academic Research
Vol. 07, Issue 02, pp.211-213, February 2026
Available online at http://www.scienceijsar.com

ISSN: 2582-6425

Case Study

A CASE STUDY ON PERFORATED SIGMOID DIVERTICULITIS

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Received 04th December 2025; **Accepted** 09th January 2026; **Published online** 23rd February 2026

Abstract

Introduction: Sigmoid colon diverticulitis, a common form of diverticular disease, is the inflammation or infection of pouches (diverticula) in the sigmoid colon.Diverticulitis is more common in older adults, with the prevalence increasing with age. **Case presentation:** A 59-year-old male presented with history of fever, abdominal pain left iliac region and constipation was evaluated. CECT abdomen showed circumferential wall thickening involving sigmoid colon with extensive pericolic fat stranding at inflamed segment of sigmoid colon and pneumoperitoneum, suggestive of perforation. Hence, Hartmann's procedure was performed. His postoperative period was uneventful; he made a steady recovery. **Discussion:**The surgical management of sigmoid colon diverticulitis with perforation is a complex and challenging procedure that requires careful consideration and planning. In this case, the patient underwent a Hartmann's procedure, which involved resecting the diseased segment of the colon and creating a colostomy. **Conclusion:** Sigmoid colon diverticulitis is a serious condition that requires prompt medical attention. The Hartmann's procedure is a viable surgical option for managing complications of this condition, including perforation. This case study demonstrates the successful management of a patient with sigmoid colon diverticulitis and perforation using Hartmann's procedure.

Keywords: Diverticulitis, Hartmann's procedure, Sigmoid colon, Perforation.

INTRODUCTION

Sigmoid colon diverticulitis, a common form of diverticular disease, is the inflammation or infection of pouches (diverticula) in the sigmoid colon. It is important because it is a leading cause of acute left lower quadrant pain and hospitalization, with a significant prevalence increasing with age, and while most cases are uncomplicated, some can lead to serious complications. Diverticulosis is common, especially in the sigmoid colon, with over 50% of individuals over 60 having it, and this increases to 70% after 80 years. While many people with diverticulosis do not develop diverticulitis (inflammation of the diverticula), a significant portion (estimated 10-25%) will experience an acute episode, with 4-15% of people with diverticulosis developing diverticulitis.

Diverticulitis is more common in older adults, with the prevalence increasing with age. If not promptly diagnosed and treated, this condition can lead to complications like abscesses, fistulas, bowel obstruction, and perforation, requiring hospitalization and potentially surgery. This case study details an instance of sigmoid colon perforation in a 59-year-old male patient which was managed by a Hartsmann's procedure. A Hartmann's procedure, also known as proctosigmoidectomy, is a surgical operation to remove a diseased part of the colon, typically the sigmoid colon and rectum, with the creation of a colostomy, and closure of the rectal stump. It was first described by Henri Albert Hartmann in 1921 as a response to the high mortality associated with the abdominoperineal resection. In this case report, we present a case of sigmoid colon diverticulitis in a patient managed with Hartmann procedure. We discussed the clinical presentation, diagnostic methods, and management strategies used, highlighting the need for prompt management to prevent potential complications in patients.

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CASE PRESENTATION

A 59-year-old male patient presented to the general physician with a history of fever, reduced appetite, abdominal pain in left iliac region, and constipation for 4 days. The patient had no history of previous surgery. On examination, the patient was conscious, oriented, afebrile, BP-105/70mmhg, HR-94/min, Spo2-98% in RA. Hypogastric and left iliac fossa tenderness with guarding were present on local examination. Preliminary blood investigations showed leukocytosis (12,300) and elevated CRP (305.66) with normal renal parameters. After sending blood and urine for culture, the patient was started on broad-spectrum IV antibiotics. He was admitted to the High Dependency Unit for further evaluation. An ECG showed sinus rhythm. An ECHO showed an EF of 60% with normal LV systolic function, no PAH. A Chest X-ray showed mildly increased bronchovascular markings in both lungs. A CECT abdomen showed circumferential wall thickening involving sigmoid colon with extensive pericolic fat stranding at inflamed segment of sigmoid colon and pneumoperitoneum, suggestive of perforation. A surgical Gastroenterologist's opinion was obtained, and surgery was advised. A Cardiologist's opinion was obtained regarding fitness for surgery. After obtaining informed consent, the patient underwent a Laparotomy and Hartmann's procedure under general and epidural anesthesia. A midline laparotomy was performed. Intra operative findings revealed a thickened sigmoid colon forming a mass with small bowel and omentum with no gross peritoneal contamination. After Careful dissection of small bowel from the phlegmonous mass,a thickened and contracted sigmoid colon with extensive peri-colic fibrinous exudates and pus was noted. The proximal rectum and colosigmoid junction were transected. Sigmoid colectomy was completed, and the specimen was sent for histopathological examination. Thorough peritoneal lavage

with 9 litres of warm saline was performed, and a 32 Fr drain placed in the pelvis. The skin was marked in left illiacfossa for the colostomy site, and the left colon was delivered through the pre-marked site, and a colostomy bag was placed over the stoma. The intra and post-operative period were uneventful. He was stabilized and shifted to ward for further management. The epidural infusion and Foley catheter were removed on Postoperative day VI, and self-voided normally. The patient made a steady recovery. The stoma started functioning, and the patient gradually started on liquid diet and progressed to a normal diet, which the patient tolerated. The Wound and stoma were healthy. Histopathology reported diverticular disease of sigmoid colon with features of diverticulitis and evidence of perforation. Pericolic tissue shows necrotizing suppurative inflammation with abscess formation. Both colonic resected ends showed features of diverticular disease. He was hemodynamically stable and clinically better, hence he was discharged.

DISCUSSION

The surgical management of sigmoid colon diverticulitis with perforation is a complex and challenging procedure that requires careful consideration and planning. In this case, the patient underwent a Hartmann's procedure, which involved resecting the diseased segment of the colon and creating a colostomy. This procedure is often performed in emergency situations where the patient's condition is critical and requires immediate attention. Hartmann's procedure has been shown to be an effective treatment option for sigmoid colon diverticulitis with perforation, with studies demonstrating low mortality rates and few complications. However, the procedure is not without its challenges, and careful consideration must be given to the patient's overall health and medical history before undergoing surgery.

"Several landmark studies have evaluated and compared surgical approaches in perforated sigmoid diverticulitis." Oberkofler et al. (2012) conducted a multicenter randomized trial comparing Hartmann's procedure with primary anastomosis, demonstrating the utility of Hartmann's procedure in emergency management of purulent or fecal peritonitis.

The DIVERTI trial (Mathonnet *et al.,* 2017) further compared these surgical strategies, finding similar mortality but significantly higher stoma-free rates in patients undergoing primary anastomosis. Additionally, a systematic review of randomized trials up to 2018 reported comparable morbidity and mortality between Hartmann's procedure and primary anastomosis, supporting Hartmann's procedure as a valid option in critically ill or unstable patients. In this case, the patient's post-operative period was uneventful, and their recovery was smooth. The stoma started functioning normally, and the patient was able to tolerate a normal diet. This outcome highlights the importance of prompt surgical intervention in managing complications of sigmoid colon diverticulitis. Delaying surgery can lead to further complications, including sepsis, organ failure, and even death. Successful management of this patient's condition also underscores the importance of a multidisciplinary approach to care. The patient received care from a team of healthcare professionals, including surgeons, anesthesiologists, general physicians, cardiologists and nurses, all of whom played a critical role in their recovery.

Conclusion

In conclusion, sigmoid colon diverticulitis is a serious condition that requires prompt medical attention. The Hartmann's procedure is a viable surgical option for managing complications of this condition, including perforation. This case study demonstrates the successful management of a patient with sigmoid colon diverticulitis and perforation using Hartmann's procedure. The findings of this case study highlight the importance of timely surgical intervention and proper post-operative care in achieving a successful outcome. They also underscore the importance of a multidisciplinary approach to care, with a team of healthcare professionals working together to provide comprehensive care. This case study contributes to the existing literature on the management of sigmoid colon diverticulitis and highlights the importance of prompt surgical intervention in managing complications of this condition. The findings of this study can be useful in guiding clinicians in the management of similar cases and underscores the importance of a multidisciplinary approach to care.

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